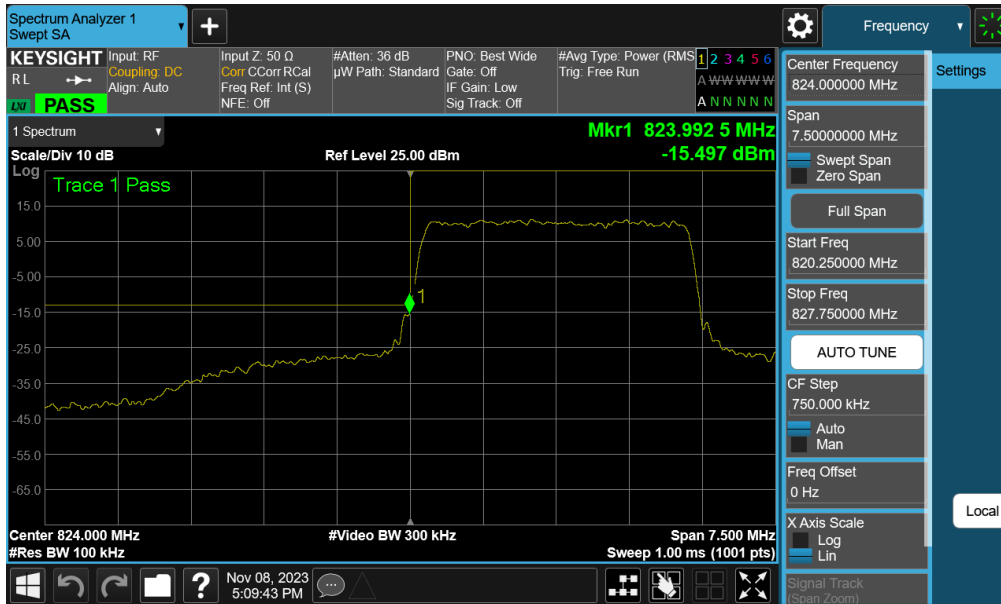
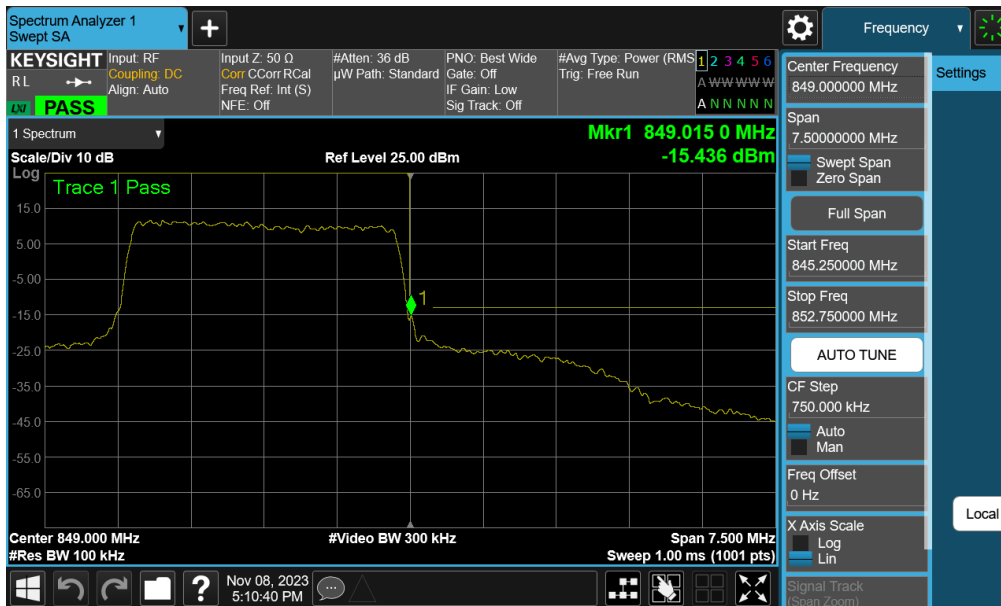


# LTE Band 26/5



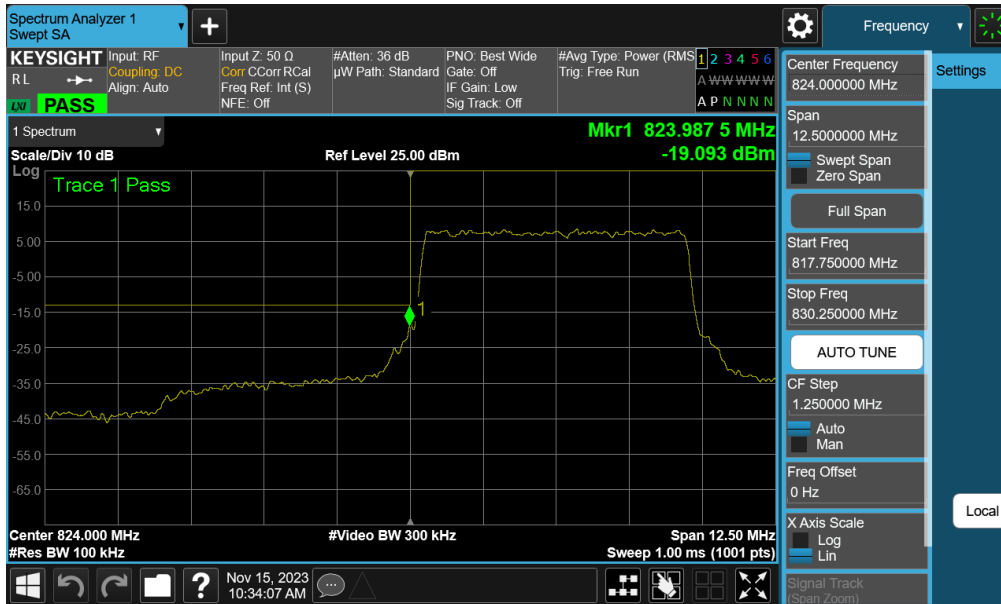
Plot 7-38. Lower Band Edge Plot (LTE Band 26/5 - 3MHz QPSK – Full RB)



Plot 7-39. Upper Band Edge Plot (LTE Band 26/5 - 3MHz QPSK – Full RB)

FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset	Page 39 of 63

# NR Band n5



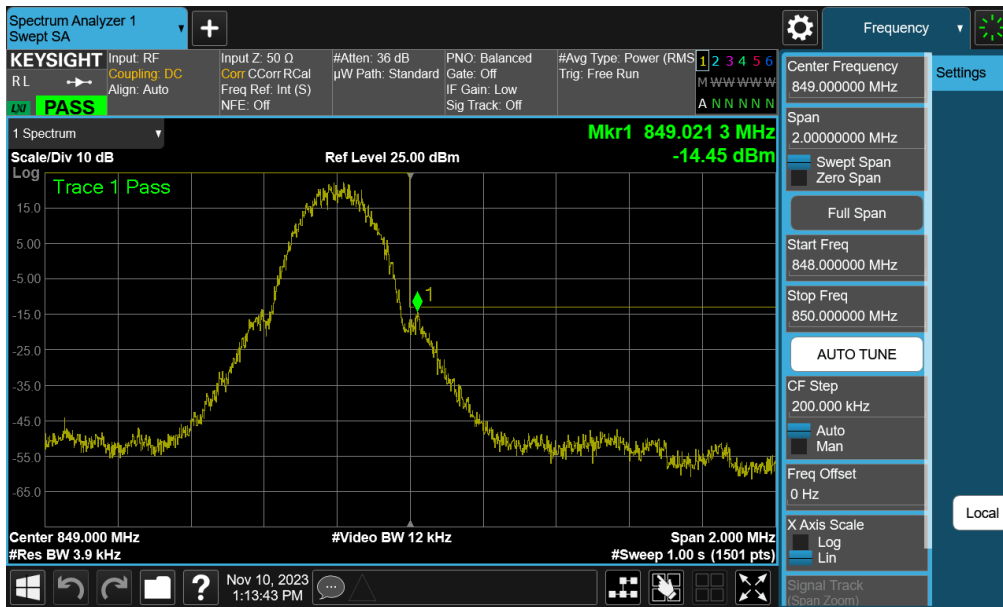
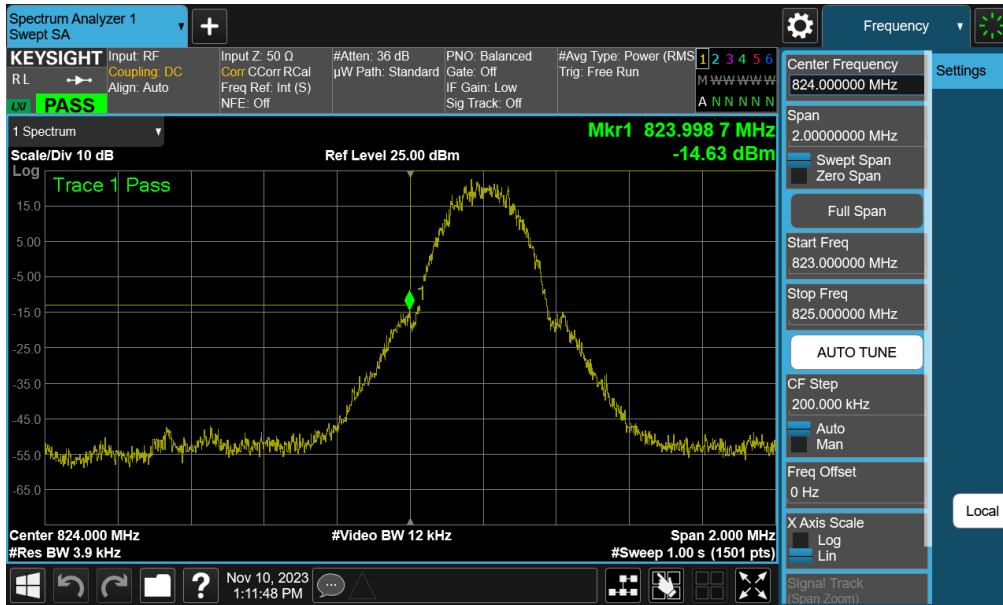
Plot 7-40. Lower Band Edge Plot (NR Band n5 – 5.0MHz QPSK - Full RB)



Plot 7-41. Upper Band Edge Plot (NR Band n5 – 5.0MHz QPSK - Full RB)

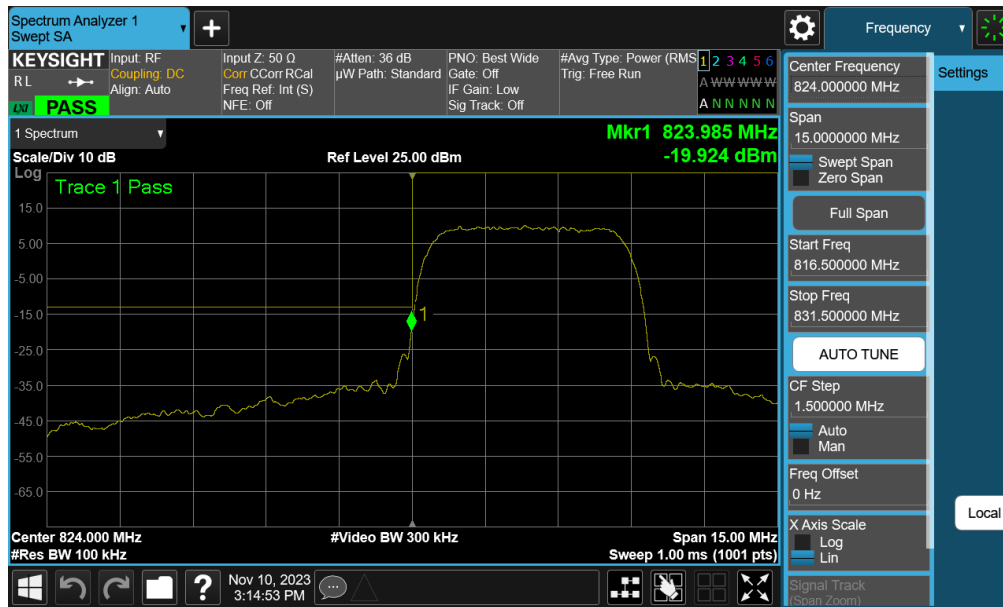
FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset	Page 40 of 63

# GSM/GPRS Cell



FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset	Page 41 of 63

# WCDMA Cell



FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset	Page 42 of 63

## 7.5 Radiated Power (ERP)

### Test Overview

Effective Radiated Power (ERP) measurements are performed using the substitution method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

### Test Procedures Used

ANSI C63.26-2015 – Section 5.2.4.4

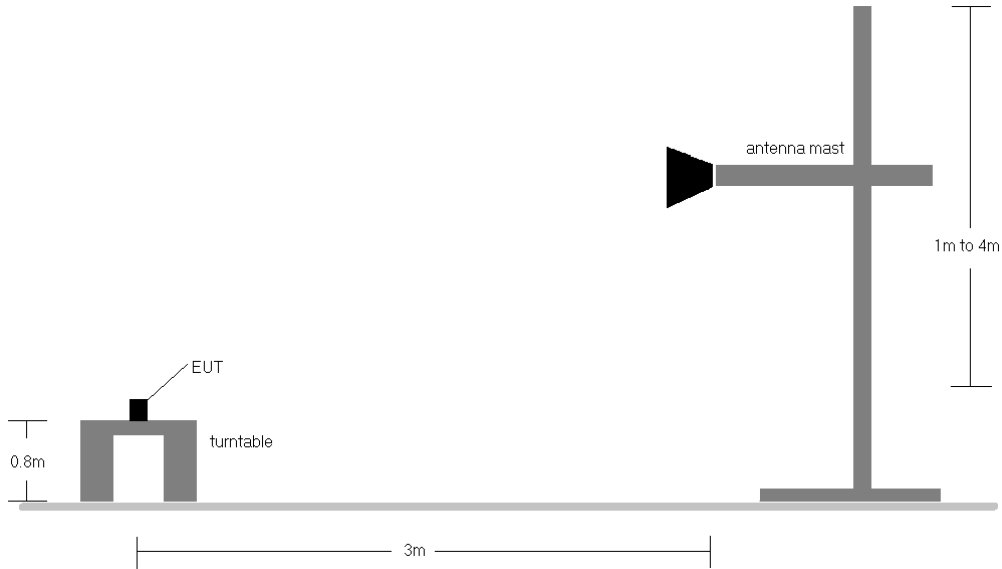
### Test Settings

1. Radiated power measurements are performed using the signal analyzer’s “channel power” measurement capability for signals with continuous operation. For signals with burst transmission, the signal analyzer’s “time domain power” measurement capability is used.
2. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
3. VBW  $\geq$  3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points  $\geq$  2 x span / RBW
6. Detector = RMS
7. Trigger is set to “free run” for signals with continuous operation with the sweep times set to “auto”. Trigger is set to enable triggering only on full power bursts with the sweep time set less than or equal to the transmission burst duration.
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation. For signals with burst transmission, the “gating” function was enabled to ensure that measurements are performed during times in which the transmitter is operating at its maximum power.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize.

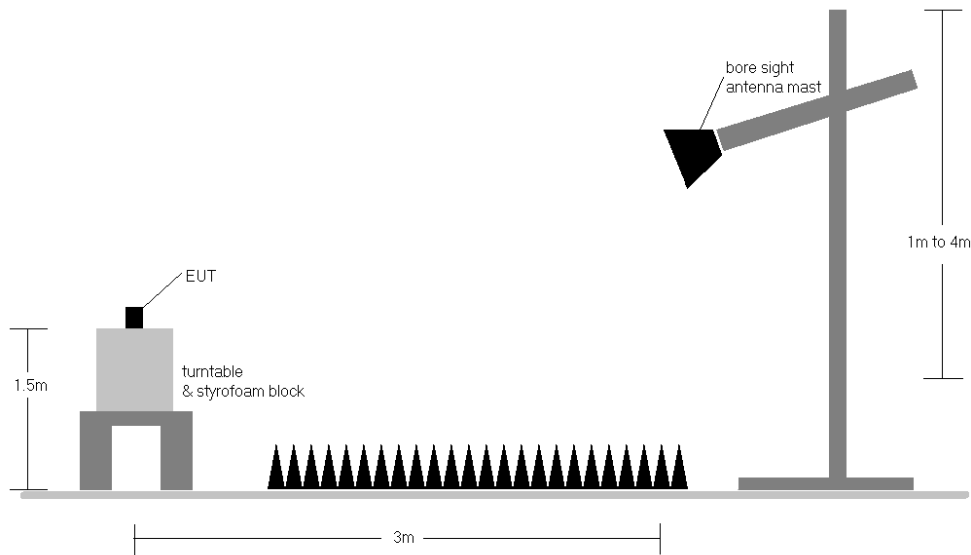
FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset	Page 43 of 63

**Test Setup**

The EUT and measurement equipment were set up as shown in the diagram below.



**Figure 7-4. Radiated Test Setup < 1GHz**



**Figure 7-5. Radiated Test Setup > 1GHz**

<b>FCC ID:</b> A3LSMA356U	<b>PART 22 MEASUREMENT REPORT</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2311010111-01.A3L	<b>Test Dates:</b> 11/08/2023 - 11/24/2023	<b>EUT Type:</b> Portable Handset	Page 44 of 63

**Test Notes**

- 1) This device employs GSM, GPRS, and EDGE capabilities. The EUT was tested under all configurations and the highest powers are reported in GPRS mode while transmitting with one slot active.
- 2) This device employs UMTS technology with WCDMA (AMR/RMC) and HSDPA capabilities. The EUT was tested under all configurations and the highest powers are reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1".
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst-case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 4) This unit was tested with its standard battery.
- 5) For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst-case configuration results are reported in this section.

<b>FCC ID:</b> A3LSMA356U	<b>PART 22 MEASUREMENT REPORT</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2311010111-01.A3L	<b>Test Dates:</b> 11/08/2023 - 11/24/2023	<b>EUT Type:</b> Portable Handset	Page 45 of 63

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
15MHz (Band 26 only)	QPSK	831.50	H	112	65	1.29	1 / 37	18.37	17.51	0.056	38.45	-20.94	19.66	0.092	40.61	-20.95
	QPSK	836.50	H	111	64	1.31	1 / 0	18.43	17.59	0.057	38.45	-20.86	19.74	0.094	40.61	-20.87
	QPSK	841.50	H	111	60	1.33	1 / 0	17.77	16.95	0.050	38.45	-21.50	19.10	0.081	40.61	-21.50
	16-QAM	836.50	H	111	64	1.31	1 / 0	17.90	17.06	0.051	38.45	-21.39	19.21	0.083	40.61	-21.40
10 MHz	QPSK	829.00	H	112	65	1.27	1 / 0	18.38	17.50	0.056	38.45	-20.95	19.65	0.092	40.61	-20.96
	QPSK	836.50	H	111	64	1.31	1 / 0	18.26	17.42	0.055	38.45	-21.03	19.57	0.091	40.61	-21.04
	QPSK	844.00	H	111	60	1.35	1 / 0	17.65	16.85	0.048	38.45	-21.60	19.00	0.079	40.61	-21.61
	16-QAM	829.00	H	112	65	1.27	1 / 0	17.54	16.66	0.046	38.45	-21.79	18.81	0.076	40.61	-21.79
5 MHz	QPSK	826.50	H	112	65	1.26	1 / 0	18.48	17.59	0.057	38.45	-20.86	19.74	0.094	40.61	-20.86
	QPSK	836.50	H	111	64	1.31	1 / 24	18.39	17.55	0.057	38.45	-20.90	19.70	0.093	40.61	-20.91
	QPSK	846.50	H	111	60	1.36	1 / 0	17.78	16.99	0.050	38.45	-21.46	19.14	0.082	40.61	-21.47
3 MHz	16-QAM	836.50	H	111	64	1.31	1 / 24	17.80	16.96	0.050	38.45	-21.50	19.11	0.081	40.61	-21.50
	QPSK	825.50	H	112	65	1.26	1 / 14	18.59	17.70	0.059	38.45	-20.75	19.85	0.097	40.61	-20.76
	QPSK	836.50	H	111	64	1.31	1 / 7	18.48	17.64	0.058	38.45	-20.81	19.79	0.095	40.61	-20.82
	QPSK	847.50	H	111	60	1.36	1 / 14	17.80	17.01	0.050	38.45	-21.44	19.16	0.082	40.61	-21.45
1.4 MHz	16-QAM	825.50	H	112	65	1.26	1 / 14	17.86	16.97	0.050	38.45	-21.48	19.12	0.082	40.61	-21.49
	QPSK	824.70	H	112	65	1.25	1 / 0	18.56	17.66	0.058	38.45	-20.79	19.81	0.096	40.61	-20.80
	QPSK	836.50	H	111	64	1.31	1 / 5	18.64	17.80	0.060	38.45	-20.65	19.95	0.099	40.61	-20.65
	QPSK	848.90	H	111	60	1.37	1 / 5	17.82	17.04	0.051	38.45	-21.41	19.19	0.083	40.61	-21.42
10 MHz	16-QAM	836.50	H	111	64	1.31	1 / 5	17.78	16.94	0.049	38.45	-21.51	19.09	0.081	40.61	-21.52
	QPSK (Opposite Pol.)	836.50	V	143	239	1.31	1 / 0	17.54	16.70	0.047	38.45	-21.75	18.85	0.077	40.61	-21.76

Table 7-5. ERP Data (LTE Band 26/5)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
20 MHz	π/2 BPSK	834.00	H	113	60	1.30	1 / 53	19.08	18.23	0.067	38.45	-20.22	20.38	0.109	40.61	-20.23
	π/2 BPSK	836.50	H	113	60	1.31	1 / 53	18.86	18.02	0.063	38.45	-20.43	20.17	0.104	40.61	-20.44
	π/2 BPSK	839.00	H	113	60	1.32	1 / 53	18.65	17.82	0.061	38.45	-20.63	19.97	0.099	40.61	-20.63
	QPSK	834.00	H	113	60	1.30	1 / 1	18.91	18.06	0.064	38.45	-20.39	20.21	0.105	40.61	-20.40
	QPSK	836.50	H	113	60	1.31	1 / 53	18.85	18.01	0.063	38.45	-20.44	20.16	0.104	40.61	-20.45
	QPSK	839.00	H	113	60	1.32	1 / 1	18.69	17.86	0.061	38.45	-20.59	20.01	0.100	40.61	-20.59
15 MHz	16-QAM	834.00	H	113	60	1.30	1 / 53	18.09	17.24	0.053	38.45	-21.21	19.39	0.087	40.61	-21.22
	π/2 BPSK	831.50	H	113	60	1.29	1 / 1	19.13	18.27	0.067	38.45	-20.18	20.42	0.110	40.61	-20.19
	π/2 BPSK	836.50	H	113	60	1.31	1 / 39	18.77	17.93	0.062	38.45	-20.52	20.08	0.102	40.61	-20.53
	π/2 BPSK	841.50	H	113	60	1.33	1 / 77	18.68	17.87	0.061	38.45	-20.58	20.02	0.100	40.61	-20.59
	QPSK	831.50	H	113	60	1.29	1 / 77	18.84	17.97	0.063	38.45	-20.48	20.12	0.103	40.61	-20.48
	QPSK	836.50	H	113	60	1.31	1 / 39	19.00	18.17	0.066	38.45	-20.29	20.32	0.108	40.61	-20.29
10 MHz	QPSK	841.50	H	113	60	1.33	1 / 1	18.83	18.01	0.063	38.45	-20.44	20.16	0.104	40.61	-20.44
	16-QAM	836.50	H	113	60	1.31	1 / 1	18.28	17.44	0.055	38.45	-21.01	19.59	0.091	40.61	-21.02
	π/2 BPSK	829.00	H	113	60	1.27	1 / 1	19.03	18.16	0.065	38.45	-20.29	20.31	0.107	40.61	-20.30
	π/2 BPSK	836.50	H	113	60	1.31	1 / 26	18.77	17.94	0.062	38.45	-20.52	20.09	0.102	40.61	-20.52
	π/2 BPSK	844.00	H	113	60	1.35	1 / 50	18.61	17.81	0.060	38.45	-20.64	19.96	0.099	40.61	-20.65
	QPSK	829.00	H	113	60	1.27	1 / 50	18.87	17.99	0.063	38.45	-20.46	20.14	0.103	40.61	-20.47
5 MHz	QPSK	836.50	H	113	60	1.31	1 / 1	18.92	18.09	0.064	38.45	-20.37	20.24	0.106	40.61	-20.37
	QPSK	844.00	H	113	60	1.35	1 / 50	18.78	17.97	0.063	38.45	-20.48	20.12	0.103	40.61	-20.49
	16-QAM	829.00	H	113	60	1.27	1 / 26	18.23	17.36	0.054	38.45	-21.09	19.51	0.089	40.61	-21.10
	π/2 BPSK	829.00	H	113	60	1.26	1 / 23	19.08	18.19	0.066	38.45	-20.26	20.34	0.108	40.61	-20.27
	π/2 BPSK	836.50	H	113	60	1.31	1 / 1	18.93	18.09	0.064	38.45	-20.36	20.24	0.106	40.61	-20.37
	π/2 BPSK	844.00	H	113	60	1.36	1 / 12	18.66	17.87	0.061	38.45	-20.58	20.02	0.100	40.61	-20.59
20 MHz	QPSK	829.00	H	113	60	1.26	1 / 12	19.02	18.13	0.065	38.45	-20.32	20.28	0.107	40.61	-20.32
	QPSK	836.50	H	113	60	1.31	1 / 12	19.04	18.20	0.066	38.45	-20.25	20.35	0.108	40.61	-20.26
	QPSK	844.00	H	113	60	1.36	1 / 1	18.74	17.95	0.062	38.45	-20.50	20.10	0.102	40.61	-20.51
	16-QAM	829.00	H	113	60	1.26	1 / 1	18.19	17.30	0.054	38.45	-21.15	19.45	0.088	40.61	-21.15
	QPSK (CP-OFDM)	834.00	H	113	60	1.30	1 / 1	15.16	14.31	0.027	38.45	-24.14	16.46	0.044	40.61	-24.15
	QPSK (Opposite Pol.)	834.00	V	134	233	1.30	1 / 1	17.38	16.53	0.045	38.45	-21.92	18.68	0.074	40.61	-21.93

Table 7-6. ERP Data (NR Band n5)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
824.20	GSM850	H	116	72	26.31	1.25	25.41	0.348	38.45	-13.04	27.56	0.570	40.61	-13.05
836.60	GSM850	H	119	72	26.16	1.31	25.32	0.340	38.45	-13.13	27.47	0.559	40.61	-13.14
848.80	GSM850	H	121	66	26.77	1.37	25.99	0.397	38.45	-12.46	28.14	0.651	40.61	-12.47
848.80	GSM850 (Opposite Pol.)	V	145	228	26.01	1.37	25.23	0.333	38.45	-13.22	27.38	0.547	40.61	-13.23
848.80	EDGE850	H	121	66	18.83	1.37	18.05	0.064	38.45	-20.40	20.20	0.105	40.61	-20.41

Table 7-7. ERP Data (GPRS Cell)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
826.40	WCDMA850	H	115	59	17.54	1.26	16.65	0.046	38.45	-21.80	18.80	0.076	40.61	-21.81
836.60	WCDMA850	H	114	61	17.19	1.31	16.35	0.043	38.45	-22.10	18.50	0.071	40.61	-22.11
846.60	WCDMA850	H	115	59	17.33	1.36	16.54	0.045	38.45	-21.91	18.69	0.074	40.61	-21.92
826.40	WCDMA850 (Opposite Pol.)	V	138	208	16.30	1.26	15.41	0.035	38.45	-23.04	17.56	0.057	40.61	-23.05

Table 7-8. ERP Data (WCDMA Cell)

FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT											Approved by: Technical Manager	
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset									Page 46 of 63		



## 7.6 Radiated Spurious Emissions Measurements

### Test Overview

Radiated spurious emissions measurements are performed using the field strength conversion method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using hybrid (biconical/log) antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

### Test Procedures Used

ANSI C63.26-2015 – Section 5.5.4

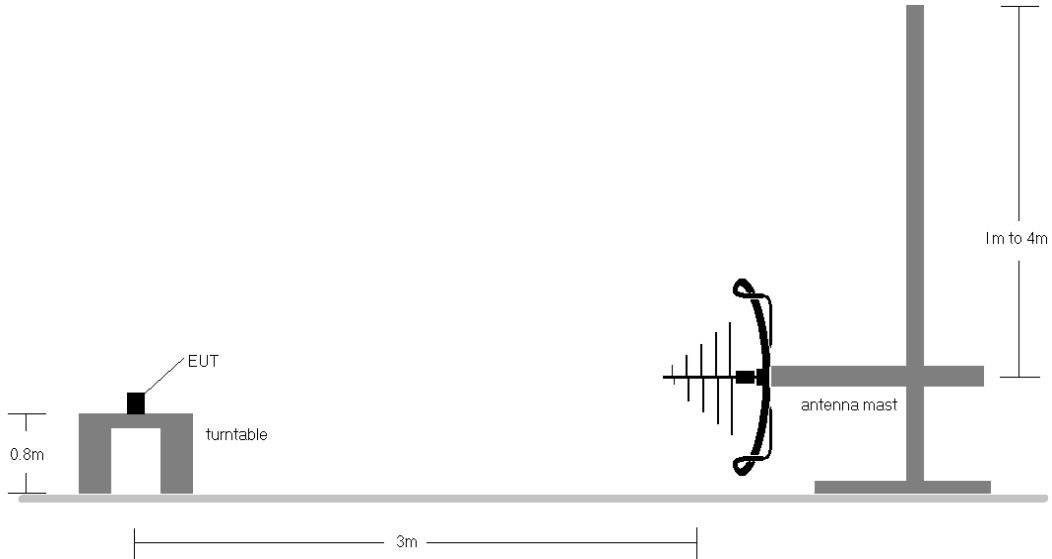
### Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW  $\geq 3 \times$  RBW
3. Span = 1.5 times the OBW
4. No. of sweep points  $\geq 2 \times$  span / RBW
5. Detector = RMS
6. Trace mode = Average (Max Hold for pulsed emissions)
7. The trace was allowed to stabilize

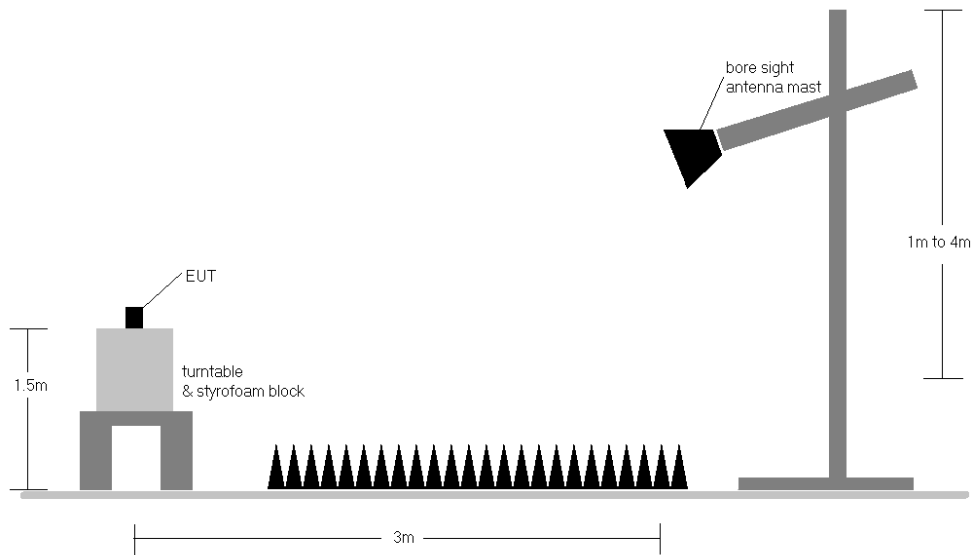
FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset	Page 47 of 63

**Test Setup**

The EUT and measurement equipment were set up as shown in the diagram below.



**Figure 7-6. Test Instrument & Measurement Setup < 1GHz**



**Figure 7-7. Test Instrument & Measurement Setup > 1GHz**

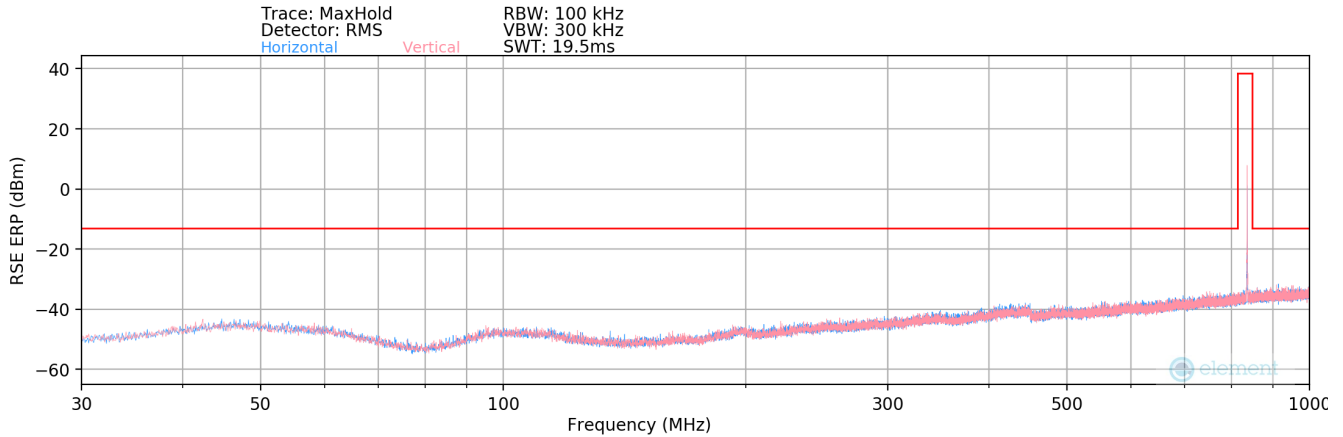
<b>FCC ID:</b> A3LSMA356U	<b>PART 22 MEASUREMENT REPORT</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2311010111-01.A3L	<b>Test Dates:</b> 11/08/2023 - 11/24/2023	<b>EUT Type:</b> Portable Handset	Page 48 of 63

**Test Notes**

- 1) Field strengths are calculated using the Measurement quantity conversions in ANSI C63.26-2015 Section 5.2.7:
  - a)  $E(\text{dB}\mu\text{V}/\text{m}) = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$
  - b)  $\text{EIRP (dBm)} = E(\text{dB}\mu\text{V}/\text{m}) + 20\log D - 104.8$ ; where D is the measurement distance in meters.
- 2) This device employs GSM, GPRS, and EDGE capabilities. The EUT was tested under all configurations and the highest powers are reported in GPRS mode while transmitting with one slot active.
- 3) This device employs UMTS technology with WCDMA (AMR/RMC) and HSDPA capabilities. The EUT was tested under all configurations and the highest powers are reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1".
- 4) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst-case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 5) This unit was tested with its standard battery.
- 6) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 7) Emissions below 18GHz were measured at a 3-meter test distance while emissions above 18GHz were measured at a 1-meter test distance with the application of a distance correction factor.
- 8) The "-" shown in the following RSE tables are used to denote a noise floor measurement.
- 9) For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst-case configuration results are reported in this section.
- 10) Spurious emission in EN-DC Operating mode with Sub 6GHz NR carrier as well as an LTE carrier (anchor) has been checked and was found to not to be the worst case.

FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset	Page 49 of 63

# LTE Band 26/5

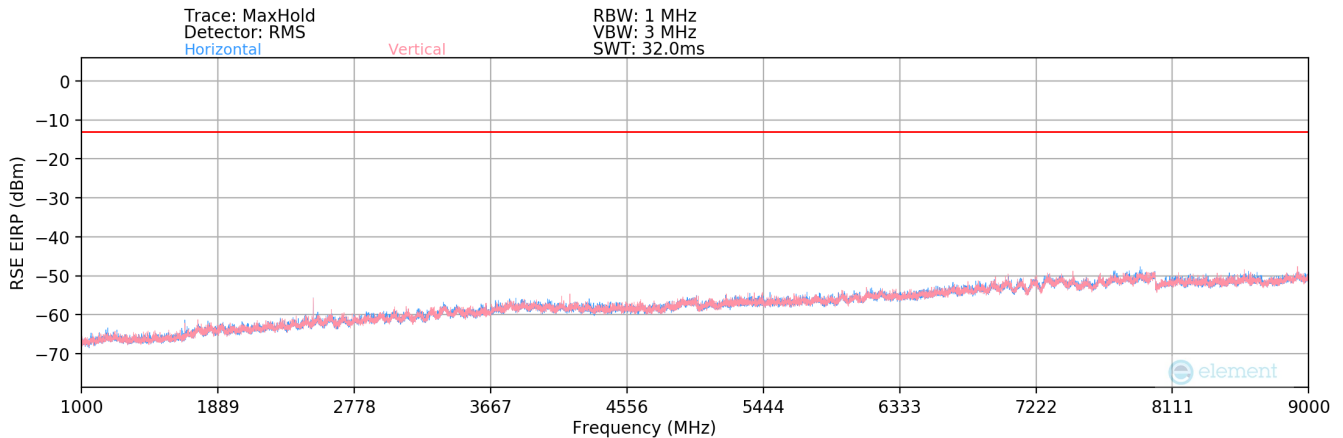


**Plot 7-46. Radiated Spurious Plot Below 1GHz (LTE Band 26/5)**

Bandwidth (MHz):	10
Frequency (MHz):	836.5
RB / Offset:	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
552.28	H	-	-	-80.05	25.44	52.39	-45.02	-13.00	-32.02

**Table 7-9. Radiated Spurious Data Below 1GHz (LTE Band 26/5)**



**Plot 7-47. Radiated Spurious Plot Above 1GHz (LTE Band 26/5)**

FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset	Page 50 of 63

Bandwidth (MHz):	10
Frequency (MHz):	829
RB / Offset:	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1658.00	H	321	14	-72.66	-8.93	25.41	-69.85	-13.00	-56.85
2487.00	H	122	221	-61.66	-5.16	40.18	-55.08	-13.00	-42.08
3316.00	H	-	-	-75.42	-1.76	29.82	-65.44	-13.00	-52.44
4145.00	H	-	-	-75.10	-0.02	31.88	-63.38	-13.00	-50.38
4974.00	H	-	-	-75.28	1.50	33.22	-62.04	-13.00	-49.04

**Table 7-10. Radiated Spurious Data Above 1GHz (LTE Band 26/5 – Low Channel)**

Bandwidth (MHz):	10
Frequency (MHz):	836.5
RB / Offset:	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.00	H	323	18	-73.12	-8.79	25.09	-70.16	-13.00	-57.16
2509.50	H	120	225	-63.83	-4.88	38.29	-56.97	-13.00	-43.97
3346.00	H	-	-	-75.24	-1.21	30.55	-64.70	-13.00	-51.70
4182.50	H	-	-	-75.18	0.18	32.00	-63.26	-13.00	-50.26
5019.00	H	-	-	-75.42	0.78	32.36	-62.90	-13.00	-49.90

**Table 7-11. Radiated Spurious Data Above 1GHz (LTE Band 26/5 – Mid Channel)**

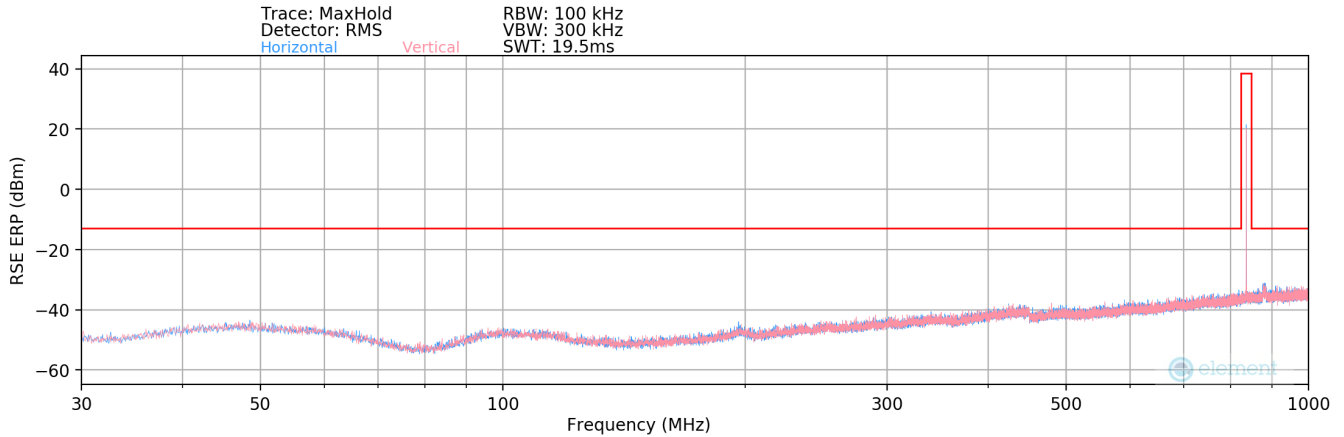
Bandwidth (MHz):	10
Frequency (MHz):	844
RB / Offset:	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1688.00	H	329	3	-71.83	-8.58	26.59	-68.67	-13.00	-55.67
2532.00	H	128	227	-60.12	-4.65	42.23	-53.02	-13.00	-40.02
3376.00	H	-	-	-74.53	-0.92	31.55	-63.71	-13.00	-50.71
4220.00	H	-	-	-74.76	0.01	32.25	-63.01	-13.00	-50.01
5064.00	H	-	-	-75.63	1.11	32.48	-62.78	-13.00	-49.78

**Table 7-12. Radiated Spurious Data Above 1GHz (LTE Band 26/5 – High Channel)**

FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset	Page 51 of 63

### NR Band n5

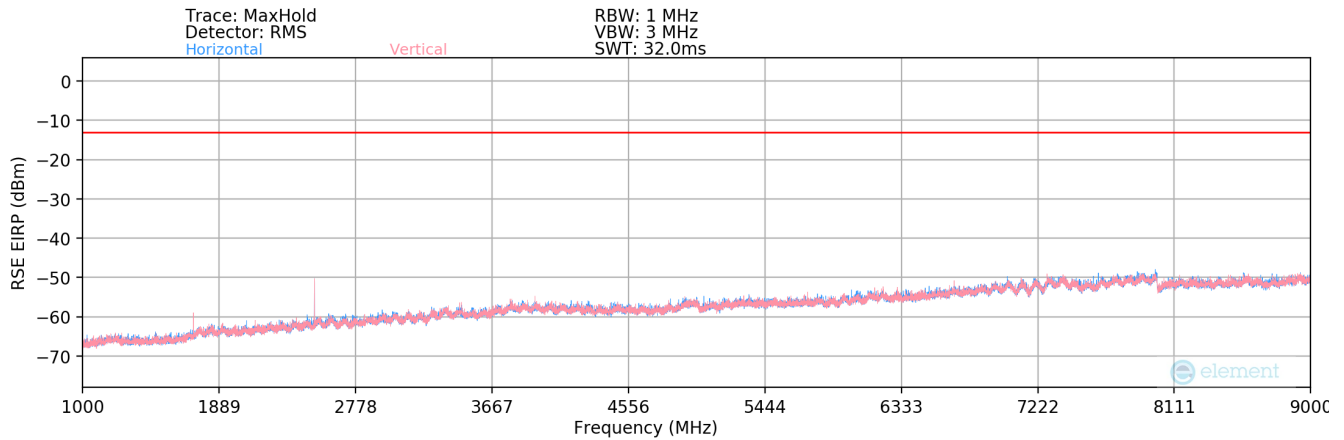


**Plot 7-48. Radiated Spurious Plot Below 1GHz (NR Band n5)**

Bandwidth (MHz):	20
Frequency (MHz):	836.5
RB / Offset:	1 / 1

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
552.14	H	-	-	-79.64	25.43	52.79	-44.61	-13.00	-31.61

**Table 7-13. Radiated Spurious Data Below 1GHz (NR Band n5)**



**Plot 7-49. Radiated Spurious Plot Above 1GHz (NR Band n5)**

FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset	Page 52 of 63

Bandwidth (MHz):	20
Frequency (MHz):	834
RB / Offset:	1 / 1

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB $\mu$ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1668.00	H	112	146	-72.40	-8.86	25.74	-69.51	-13.00	-56.51
2502.00	H	154	348	-61.19	-5.38	40.43	-54.83	-13.00	-41.83
3336.00	H	-	-	-74.86	-2.09	30.05	-65.20	-13.00	-52.20
4170.00	H	-	-	-75.23	-0.10	31.67	-63.59	-13.00	-50.59
5004.00	H	-	-	-75.55	1.00	32.45	-62.81	-13.00	-49.81

**Table 7-14. Radiated Spurious Data Above 1GHz (NR Band n5 – Low Channel)**

Bandwidth (MHz):	20
Frequency (MHz):	836.5
RB / Offset:	1 / 1

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB $\mu$ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.00	H	112	146	-70.04	-8.82	28.14	-67.11	-13.00	-54.11
2509.50	H	139	347	-59.17	-5.28	42.55	-52.71	-13.00	-39.71
3346.00	H	-	-	-75.16	-1.97	29.87	-65.39	-13.00	-52.39
4182.50	H	-	-	-75.74	-0.02	31.24	-64.02	-13.00	-51.02
5019.00	H	-	-	-75.57	0.52	31.95	-63.31	-13.00	-50.31

**Table 7-15. Radiated Spurious Data Above 1GHz (NR Band n5 – Mid Channel)**

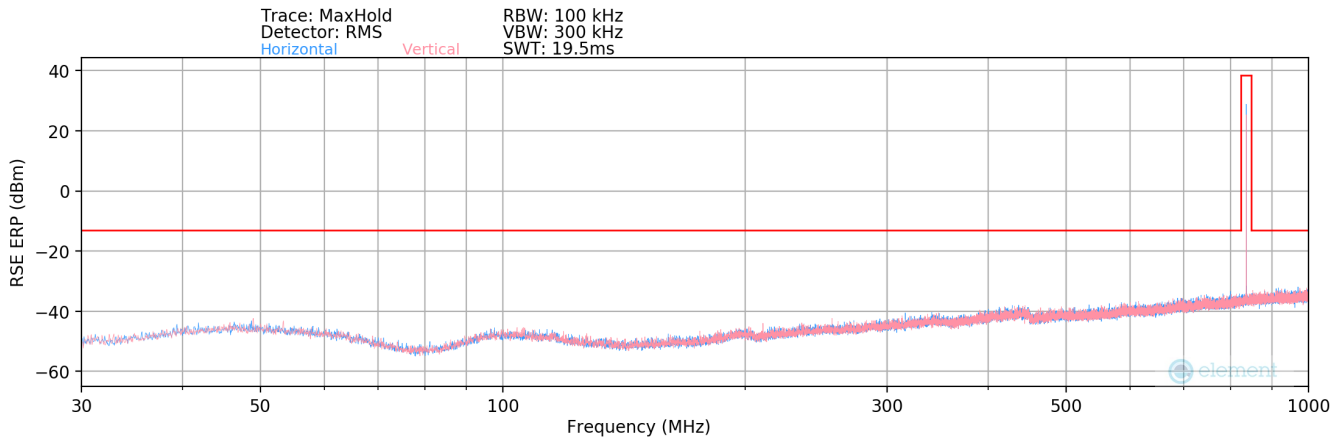
Bandwidth (MHz):	20
Frequency (MHz):	839
RB / Offset:	1 / 1

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB $\mu$ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1678.00	H	116	145	-71.27	-8.76	26.97	-68.29	-13.00	-55.29
2517.00	H	134	350	-59.58	-5.17	42.25	-53.01	-13.00	-40.01
3356.00	H	-	-	-75.62	-1.81	29.57	-65.68	-13.00	-52.68
4195.00	H	-	-	-75.82	-0.06	31.12	-64.14	-13.00	-51.14
5034.00	H	-	-	-75.91	0.64	31.73	-63.53	-13.00	-50.53

**Table 7-16. Radiated Spurious Data Above 1GHz (NR Band n5 – High Channel)**

FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset	Page 53 of 63

### GSM/GPRS Cell

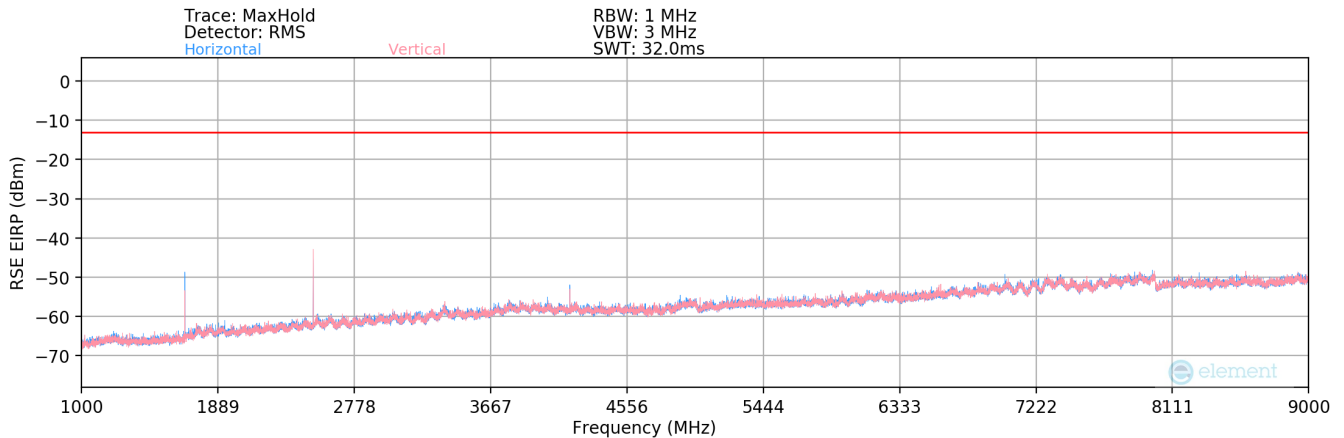


**Plot 7-50. Radiated Spurious Plot Below 1GHz (GPRS Cell)**

Mode:	GPRS 1 Tx Slot
Channel:	190
Frequency (MHz):	836.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
546.54	H	-	-	-80.68	25.31	51.63	-45.78	-13.00	-32.78

**Table 7-17. Radiated Spurious Data Below 1GHz (GPRS Cell)**



**Plot 7-51. Radiated Spurious Plot Above 1GHz (GPRS Cell)**

FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset	Page 54 of 63



Mode:	GPRS 1 Tx Slot
Channel:	128
Frequency (MHz):	824.2

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB $\mu$ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1648.40	H	151	54	-61.90	-9.05	36.05	-59.21	-13.00	-46.21
2472.60	H	136	39	-48.98	-5.28	52.74	-42.52	-13.00	-29.52
3296.80	H	-	-	-77.24	-2.04	27.72	-67.54	-13.00	-54.54
4121.00	H	166	52	-75.66	0.11	31.45	-63.80	-13.00	-50.80
4945.20	H	-	-	-77.69	1.43	30.74	-64.52	-13.00	-51.52
5769.40	H	-	-	-78.76	3.07	31.31	-63.95	-13.00	-50.95
6593.60	H	-	-	-78.55	4.76	33.21	-62.04	-13.00	-49.04

**Table 7-18. Radiated Spurious Data Above 1GHz (GPRS Cell – Low Channel)**

Mode:	GPRS 1 Tx Slot
Channel:	190
Frequency (MHz):	836.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB $\mu$ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.20	H	137	60	-62.42	-8.79	35.79	-59.46	-13.00	-46.46
2509.80	H	122	46	-46.79	-4.88	55.33	-39.92	-13.00	-26.92
3346.40	H	-	-	-76.99	-1.20	28.81	-66.45	-13.00	-53.45
4183.00	H	152	75	-74.58	0.17	32.59	-62.66	-13.00	-49.66
5019.60	H	-	-	-77.39	0.76	30.37	-64.89	-13.00	-51.89
5856.20	H	-	-	-78.37	2.15	30.78	-64.48	-13.00	-51.48
6692.80	H	-	-	-78.30	5.04	33.74	-61.52	-13.00	-48.52

**Table 7-19. Radiated Spurious Data Above 1GHz (GPRS Cell – Mid Channel)**

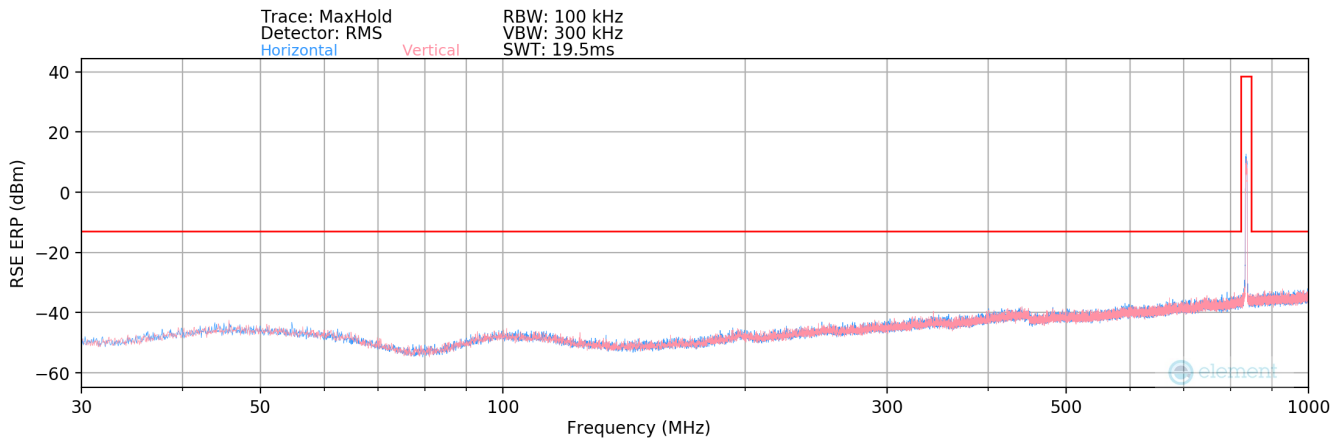
Mode:	GPRS 1 Tx Slot
Channel:	251
Frequency (MHz):	848.8

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB $\mu$ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1697.60	H	151	54	-63.55	-8.44	35.01	-60.25	-13.00	-47.25
2546.40	H	136	41	-48.87	-4.56	53.57	-41.69	-13.00	-28.69
3395.20	H	-	-	-77.88	-1.02	28.10	-67.16	-13.00	-54.16
4244.00	H	131	70	-72.39	-0.35	34.26	-61.00	-13.00	-48.00
5092.80	H	-	-	-77.07	1.39	31.32	-63.93	-13.00	-50.93
5941.60	H	-	-	-78.38	2.85	31.47	-63.79	-13.00	-50.79
6790.40	H	-	-	-78.67	5.11	33.44	-61.82	-13.00	-48.82

**Table 7-20. Radiated Spurious Data Above 1GHz (GPRS Cell – High Channel)**

FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset	Page 55 of 63

# WCDMA Cell

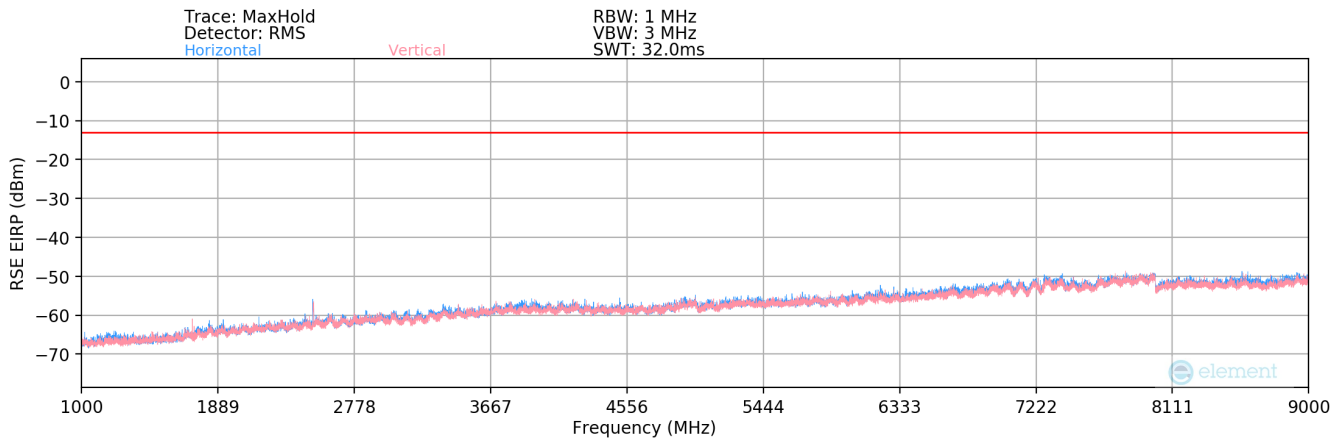


**Plot 7-52. Radiated Spurious Plot Below 1GHz (WCDMA Cell)**

Mode:	WCDMA RMC
Channel:	4183
Frequency (MHz):	836.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
861.04	H	-	-	-81.63	30.15	55.52	-41.89	-13.00	-28.89

**Table 7-21. Radiated Spurious Data Below 1GHz (WCDMA Cell)**



**Plot 7-53. Radiated Spurious Plot Above 1GHz (WCDMA Cell)**

FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset	Page 56 of 63

Mode:	WCDMA RMC
Channel:	4132
Frequency (MHz):	826.4

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1652.80	H	160	130	-72.63	-8.99	25.38	-69.88	-13.00	-56.88
2479.20	H	177	39	-71.30	-5.23	30.47	-64.79	-13.00	-51.79
3305.60	H	-	-	-73.86	-1.92	31.22	-64.04	-13.00	-51.04
4132.00	H	-	-	-74.35	0.03	32.68	-62.58	-13.00	-49.58
4958.40	H	-	-	-74.53	1.45	33.92	-61.34	-13.00	-48.34

**Table 7-22. Radiated Spurious Data Below 1GHz (WCDMA Cell – Low Channel)**

Mode:	WCDMA RMC
Channel:	4183
Frequency (MHz):	836.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.20	H	148	137	-71.04	-8.79	27.17	-68.08	-13.00	-55.08
2509.80	H	170	50	-70.69	-4.88	31.43	-63.82	-13.00	-50.82
3346.40	H	-	-	-73.65	-1.20	32.15	-63.11	-13.00	-50.11
4183.00	H	-	-	-74.62	0.17	32.55	-62.70	-13.00	-49.70
5019.60	H	-	-	-74.11	0.76	33.65	-61.61	-13.00	-48.61

**Table 7-23. Radiated Spurious Data Below 1GHz (WCDMA Cell – Mid Channel)**

Mode:	WCDMA RMC
Channel:	4233
Frequency (MHz):	846.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1693.20	H	155	156	-69.90	-8.51	28.59	-66.67	-13.00	-53.67
2539.80	H	175	44	-69.91	-4.60	32.49	-62.76	-13.00	-49.76
3386.40	H	-	-	-73.91	-0.97	32.12	-63.14	-13.00	-50.14
4233.00	H	-	-	-73.75	-0.04	33.21	-62.05	-13.00	-49.05
5079.60	H	-	-	-73.50	1.08	34.58	-60.68	-13.00	-47.68

**Table 7-24. Radiated Spurious Data Below 1GHz (WCDMA Cell – High Channel)**

FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset	Page 57 of 63

## 7.7 Frequency Stability / Temperature Variation

### Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26-2015. The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

***For Part 22 and RSS-132, the frequency stability of the transmitter shall be maintained within  $\pm 0.00025\%$  ( $\pm 2.5$  ppm) of the center frequency.***

### Test Procedure Used

ANSI C63.26-2015 – Section 5.6

### Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

### Test Setup

The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber.

### Test Notes

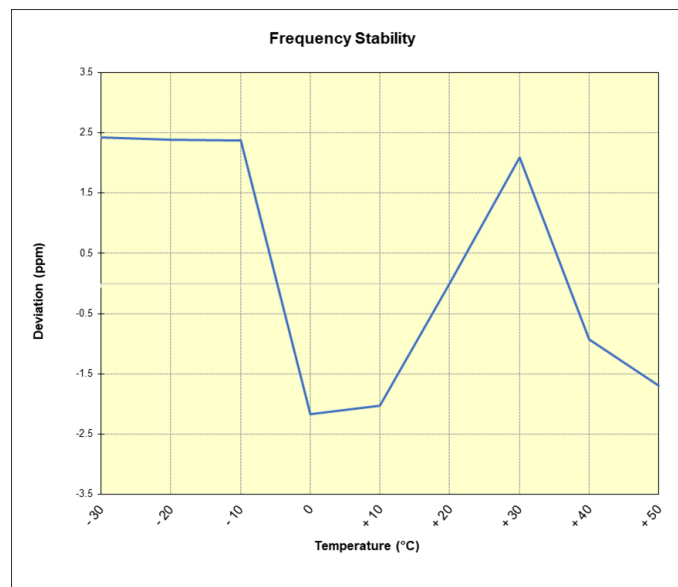
None

FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset	Page 58 of 63

## LTE Band 26/5

LTE Band 26/5					
Operating Frequency (Hz):		836,500,000			
Ref. Voltage (VDC):		4.411			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.411	- 30	836,498,251	2,029	0.0002426
		- 20	836,498,222	1,999	0.0002390
		- 10	836,498,204	1,982	0.0002370
		0	836,494,414	-1,808	-0.0002161
		+ 10	836,494,531	-1,691	-0.0002022
		+ 20 (Ref)	836,496,222	0	0.0000000
		+ 30	836,497,977	1,755	0.0002098
		+ 40	836,495,444	-778	-0.0000931
		+ 50	836,494,809	-1,414	-0.0001690
Battery Endpoint	3.593	+ 20	836,496,726	504	0.0000602

**Table 7-25. LTE Band 26/5 Frequency Stability Data**



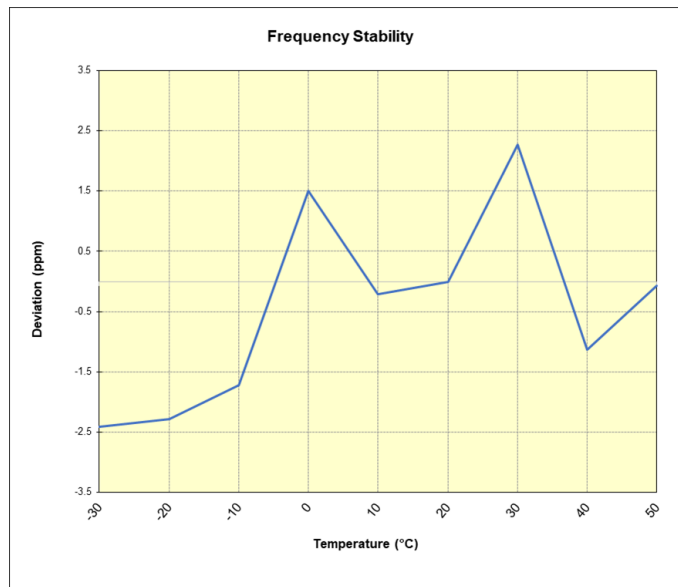
**Plot 7-54. LTE Band 26/5 Frequency Stability Chart**

FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset	Page 59 of 63

**NR Band n5**

<b>NR Band n5</b>					
		Operating Frequency (Hz):		836,500,000	
		Ref. Voltage (VDC):		4.411	
		Deviation Limit:		± 0.00025% or 2.5 ppm	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.411	- 30	836,302,877	-2,015	-0.0002410
		- 20	836,302,981	-1,912	-0.0002286
		- 10	836,303,450	-1,443	-0.0001725
		0	836,306,146	1,253	0.0001498
		+ 10	836,304,712	-181	-0.0000216
		+ 20 (Ref)	836,304,893	0	0.0000000
		+ 30	836,306,794	1,901	0.0002273
		+ 40	836,303,946	-947	-0.0001133
		+ 50	836,304,833	-60	-0.0000072
Battery Endpoint	3.593	+ 20	836,306,177	1,284	0.0001535

**Table 7-26. NR Band n5 Frequency Stability Data**



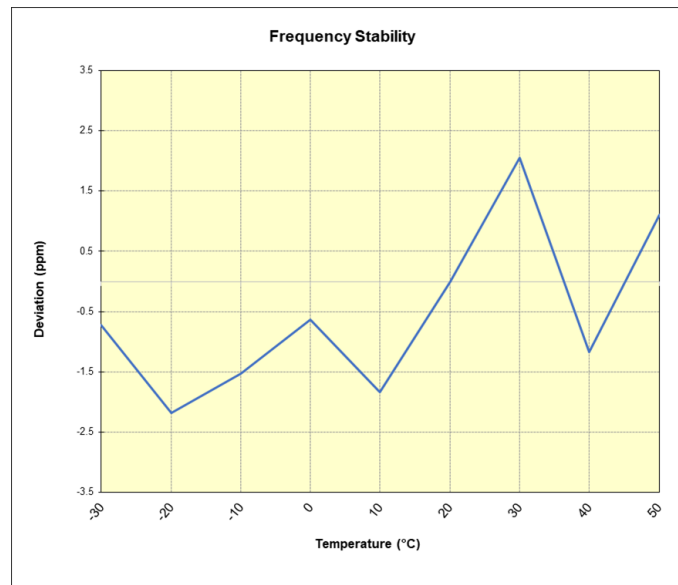
**Plot 7-55. NR Band n5 Frequency Stability Chart**

<b>FCC ID:</b> A3LSMA356U	<b>PART 22 MEASUREMENT REPORT</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2311010111-01.A3L	<b>Test Dates:</b> 11/08/2023 - 11/24/2023	<b>EUT Type:</b> Portable Handset	Page 60 of 63

## GSM/GPRS Cell

GSM/GPRS Cellular					
Operating Frequency (Hz):		836,600,000			
Ref. Voltage (VDC):		4.411			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.411	- 30	836,600,698	-604	-0.0000722
		- 20	836,599,480	-1,822	-0.0002178
		- 10	836,600,028	-1,274	-0.0001523
		0	836,600,769	-534	-0.0000638
		+ 10	836,599,768	-1,535	-0.0001835
		+ 20 (Ref)	836,601,303	0	0.0000000
		+ 30	836,603,022	1,720	0.0002056
		+ 40	836,600,329	-974	-0.0001164
		+ 50	836,602,230	927	0.0001108
Battery Endpoint	3.593	+ 20	836,603,083	1,781	0.0002129

**Table 7-27. GSM/GPRS Cell Frequency Stability Data**



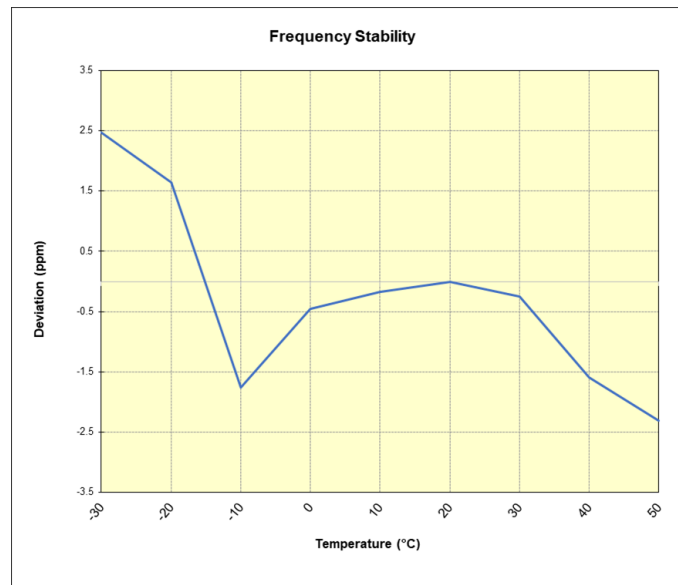
**Plot 7-56. GSM/GPRS Cell Frequency Stability Chart**

FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset	Page 61 of 63

## WCDMA Cell

WCDMA Cellular					
		Operating Frequency (Hz):		836,600,000	
		Ref. Voltage (VDC):		4.411	
		Deviation Limit:		± 0.00025% or 2.5 ppm	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.411	- 30	836,596,810	2,076	0.0002482
		- 20	836,596,109	1,375	0.0001644
		- 10	836,593,263	-1,470	-0.0001757
		0	836,594,355	-379	-0.0000453
		+ 10	836,594,595	-139	-0.0000166
		+ 20 (Ref)	836,594,734	0	0.0000000
		+ 30	836,594,521	-213	-0.0000254
		+ 40	836,593,402	-1,332	-0.0001592
Battery Endpoint	3.593	+ 20	836,595,757	1,024	0.0001224

**Table 7-28. WCDMA Cell Frequency Stability Data**



**Plot 7-57. WCDMA Cell Frequency Stability Chart**

FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset	Page 62 of 63



## 8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMA356U** complies with all the requirements of Part 22 of the FCC rules.

FCC ID: A3LSMA356U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2311010111-01.A3L	Test Dates: 11/08/2023 - 11/24/2023	EUT Type: Portable Handset	Page 63 of 63